Claims

1   A process for the production of a transgenic plant the seeds of which comprise an embryo exhibiting a modified development, wherein at least one plant cell is transformed with at least one DNA construct comprising a nucleic acid sequence derived from at least one ASK-gene of group II and regenerated to a plant whose embryos exhibit the modified development.

2.   The process according to claim 1, wherein the modified development is characterised by the abortion of the embryo.

3   The process according to claim 1, wherein the modified development is characterised by the development of an increased number of cotyledons.

4   The process according to claim 1, wherein the DNA construct is an antisense or sense construct or a construct comprising a transposable element.

5   The process according to claim 1, wherein the DNA construct is capable of eliminating the expression of an endogenous ASK-gene of group II.

6   The process according to claim 1, wherein the ASK-gene is an ASKazetha (ASKζ) and/or an ASK-etha (ASKη) gene.

7   The process according to claim 1, wherein the nucleic acid sequence derived from an ASK-gene of group II is a fragment of 150 to 350 bp, in particular of about 300 bp, corresponding to the 5'-untranslated region and a part of the N-terminal coding region of ASK-genes of group II, preferably obtained using PCR-generated fragments.

8.   The process according to claim 1, wherein the ASK-gene is in the form of a cDNA or genomic DNA

9.   The process according to claim 1, wherein the DNA construct comprises at least one regulatory element being operably linked to the nucleic acid sequence derived from the ASK-gene of group II and being

capable of directing the expression of the nucleic acid sequence derived from the ASK-gene of group II.

10. The process according to claim 9, wherein the regulatory element is a promoter and/or enhancer, in particular the 35 S CaMV-promoter.

11. The process according to claim 1, wherein the DNA construct comprises a transcription termination signal operably linked to the nucleic acid sequences derived from the ASK-gene of group II, in particular a poly A addition site.

12. The process according to claim 1, wherein the DNA construct is cloned into a vector, in particular a plasmid or viral vector.

13. The process according to claim 1, wherein the plant cell is from a monocotyledonous or dicotyledonous plant.

14. The process according to claim 13, wherein the monocotyledonous or dicotyledonous plant is Arabidopsis, brassica, cotton, potato, soya, sugar beet, sugar cane, an ornamental plant, rice, maize, barley or wheat.

15. The process according to claim 1, wherein the plant cell is transformed by transfer of the DNA construct by a method selected from the group selected from: transfer via a bacterium, transfer via virus to the cell, transfer via direct uptake of the DNA construct by microinjection of the DNA construct, transfer via direct uptake of the DNA construct by particle bombardment

16. The process according to claim 1, wherein the transformed cell is regenerated into a differentiated plant.

17. An antisense construct comprising at least one regulatory element operably linked in antisense orientation to a nucleic acid sequence derived from at least one ASK-gene of group II.

18. A vector comprising the antisense construct of claim 18.

19. A genetically modified cell containing at least one antisense construct of claim 18.

20. A plant comprising at least one cell according to claim 20.

21. Seeds and plant derived tissue comprising a genetically modified cell according to claim 20.

22. A plant produced according to the process of according to claim 1.

23. Seeds and plant derived tissue obtained from a plant produced by the process according to according to claim 1.

24. A transgenic plant the seeds of which comprises an embryo exhibiting a modified development. said plant comprising at least one plant cell transformed by a nucleic acid sequence derived from at least one ASK-gene of group II wherein at least one embryo exhibits the modified development.